

FOR **IMMEDIATE RELEASE**

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## **PSE delivers first Profitable-to-Promise product**

### **New ModelEnterprise OSS Scheduler component has built-in PTP capability**

Process Systems Enterprise (PSE) of London today released version 1 of the **ModelEnterprise** supply chain platform, incorporating the **Optimal Single Site Scheduler (OSS Scheduler)**. The OSS Scheduler is the first product with a built-in **Profitable-to-Promise (PTP)** capability to be made commercially available. It is also the first of a range of applications PSE will release for the ModelEnterprise platform, providing capabilities ranging from supply chain optimal design to online scheduling.

Industry commentators ARC who first coined the term "Profitable-to-Promise" in February 2002, described it as "the holy grail of order promising". Effectively PTP is the ability to respond rapidly to a proposed order by determining how profitable it is to process this order or, alternatively, the minimum price at which it can be fulfilled at a profit. PTP applications will be the cornerstone of electronic business in the future, where it will be necessary to respond to client inquiries promptly with a well-quantified response.

ModelEnterprise's OSS Scheduler uses novel rolling-horizon techniques to optimise simultaneously both short-term scheduling and longer-term planning for a single production site, believed to be an industry-first in itself. Because the scheduler optimises an economic objective function, it can answer not only questions such as "do I have the capacity to fulfill this order" (Capable-to-Promise), but "what is the maximum profit that I can realise" or "on what terms should I accept the order" (Profitable-to-Promise). In calculating profit, the OSS Scheduler takes into account the potential negative effect on existing orders which may be delayed or interrupted.

PSE has been able to leapfrog long-established market players by leveraging both its technology links with London's Imperial College, a world center of supply chain research, and the credibility built up within the process industries through its gPROMS advanced process modelling and optimisation software environment.

Extending the paradigm of gPROMS' multipurpose model-based environment from process to enterprise modeling, ModelEnterprise allows many applications to be run on a single underlying model of the enterprise that spans the space between the transaction-focused ERP system and the operations-focused PCS system. By supporting easy, as-required construction and maintenance of a detailed enterprise model, all the way from multi-site production/distribution networks down to individual sensors, ModelEnterprise simplifies knowledge capture and ensures consistency across applications.

Launch customer **Petrochem Carless** will use the OSS Scheduler to plan the monthly production schedule for its Harwich, UK, speciality refinery against the forecast demand. They chose the technology because of its ability to model the complexities of the manufacturing process while taking into account Petrochem Carless' multi-step pricing, which were beyond the capability of a number of other candidate products.

**The model company**

“ModelEnterprise helps us to bring production under control by integrating the planning and scheduling function with our existing inventory applications. Coupled with the ability to assess the true value of each piece of business, we anticipate that this will make a big impact on our economic performance” says Stephen Fender, responsible for the introduction of the system at Petrochem Carless.

John de Brugha, Head of Sales & Marketing at PSE says “In this age, it is essential that production companies can respond rapidly to customer requests while ensuring that they will make a profit. To do this accurately, taking into account real-world constraints, requires linking the order system with a model that understands the characteristics of materials, equipment and recipes, as well as the complex interactions among all these. To come up with the best solution, not just a good solution, requires sophisticated optimisation technology. ModelEnterprise’s OSS Scheduler has both.”

ARC analyst Tom Fiske adds “In today’s Internet and e-business environments, customers expect rapid delivery of customized products. Emphasis in the marketplace is shifting to smaller just-in-time individual orders, yet companies have little understanding of how this will impact their business – until now. Successful companies will be those that can make knowledgeable, informed, rapid and profitable decisions on customer orders and spot market opportunities. ModelEnterprise’s OSS Scheduler incorporates PTP functionality to ensure companies maximise profits in an ever increasingly demanding global atmosphere.”

## **Notes for Editors**

### **Graphic material**

Graphic material on ModelEnterprise is available at <http://www.psenterprise.com/pressroom/>

### **Profitable-to-Promise**

Available-to-Promise (ATP) and Capable-to-Promise (CTP) are familiar terms to supply chain practitioners. ATP means that the enterprise has sufficient uncommitted stock to meet a customer’s order; CTP means that it has sufficient uncommitted production capacity to make the order in time. Profitable-to-Promise (PTP) is a new term which determines the price at which it becomes profitable to meet a customer’s order.

For example, although a new order may be possible to fulfill, it might be unprofitable because it substantially delays previously committed orders or because it disrupts a long production run with wasteful changeovers in order to meet a tight deadline. Consequently, a new order should never be considered in isolation from the production that is already planned. Quantifying the cost impact of processing the order requires a sophisticated tool capable of understanding both the economics of production and the configuration and capabilities of the production plant.

ModelEnterprise’s OSS Scheduler takes these factors into account to determine either the profit to be made from processing the order, or alternatively, the “late order premium” that should be added to the price in order to make a profit.

### **About ModelEnterprise**

ModelEnterprise is an integrated environment for modelling and managing vital business decisions at all stages of design, planning and operation of flexible enterprises – from multi-site capacity planning to plant design and from single-site planning to real-time schedule execution.

ModelEnterprise is not a single tool for solving all supply chain problems, but a modular modelling platform that allows the construction and maintenance of complex enterprise model representing the enterprise’s supply chain, from multiple production sites, warehouses and distribution centres, down to individual materials, recipes, equipment items and sensors. Open interfaces provides other software with complete access to all available information and allow virtually infinite extension.

The uniqueness of ModelEnterprise stems from its model-based approach. The Common Data Model supports the creation of libraries of models specific to industry sectors, and spans the space between the business-process-oriented Enterprise Resource Planning (ERP) model and the detailed production database of the Plant Control System (PCS). ModelEnterprise supports a wide range of tools applied to the underlying model for solving different types of problem, such as strategic design of supply chain networks, multi-site production and distribution scheduling and single-site plant planning and scheduling. Tools, known as Enterprise Management Applications (EMAs) can be supplied by PSE, third-party suppliers or the enterprise itself.

The first EMA for the ModelEnterprise platform is the Optimum Single-Site Scheduler (OSS Scheduler), which determines mathematically optimal production schedules for given availabilities of plant resources, recipe information and known product demands. The OSS Scheduler incorporates substantial recent enhancements to solution technology, including combined detailed/aggregated scheduling techniques, rolling horizon approaches and Dash Optimization's industry-leading XPRESS numerical solver for mixed integer linear programming problems.

The OSS Scheduler's rolling-horizon and aggregation techniques use the same underlying model to provide detailed scheduling over an initial period of production and a coarser representation over subsequent time periods. This has the unique advantage that the effect of future orders, scheduled maintenance, etc. are taken into account in the detailed schedule for the immediate period. The underlying technology has been proven over many years' application in the chemical industry and PSE is working with a number of initial customers on industrial applications.

## About Petrochem Carless

Petrochem Carless (<http://www.petrochemgroup.com>), handling over one million tonnes of chemicals and hydrocarbons a year, is one of the largest independent petrochemical suppliers in the world. The company supplies an extensive product range, from commodity hydrocarbons to very specialist custom made materials.

## About Process Systems Enterprise Ltd

PSE (<http://www.psenterprise.com>) is one of the fastest growing providers of model-based technology and services for design and decision support to the process manufacturing industries. The company was founded in 1997, originally to deliver and support in the commercial market innovative process modelling technology originating from London's Imperial College. Among its unique offerings are advanced software packages, services and expertise for modelling and simulation of manufacturing processes and optimal design, planning, scheduling and operation of flexible manufacturing facilities. PSE has established itself as a leading independent high-tech provider to a growing, global customer base that encompasses the largest process manufacturing and automation companies in the world. The company is a winner of the prestigious UK Queen's Award for Enterprise and Innovation for 2001, for its gPROMS mathematical modelling framework and dynamic optimisation technology. It employs 35 graduates and PhDs at its headquarters in London, UK, and works through agency and value-added reseller operations in the US and Japan.

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